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### **A Systemic Risk Warning System**

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# A systemic risk warning system

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16 January 2010

*Economists largely neglected systemic risk in the financial sector. This column discusses how governments should gather data about systemic risk and assess its implications. It says the new European Systemic Risk Board is far from the ideal – it is too big, too homogeneous, and lacks independence.*

Economists have been widely reviled in the popular press for failing to predict the current financial crisis. To some extent, this criticism is unfair. As David K. Levine (2009) has argued, future economic outcomes are functions of future fundamental random variables. Even if economists could perfectly model the world and even if they knew all of the potential fundamental random variables and their distributions, they could at most describe the statistical distribution of future economic outcomes. However, even if economists could not have predicted the timing of the current collapse, it might be argued that they should have realised the extent of the *systemic risk* in the financial sector.

If economists had properly assessed the systemic risk in the global financial system in early 2007, the vulnerability of financial institutions would have been recognised, and it would have been understood that if events triggered the collapse of just one or a few important financial firms, then an entire national, or even the international, financial system could be endangered. Given the importance of the financial system to the real economy's infrastructure, the danger of a damaging or even catastrophic blow to the real economy would have been seen.

Yet, few – if any – economists sounded a widely heard alarm on this point. In the period prior to the credit crisis of August 2007, many economists voiced concerns about the rise in US house prices and the size of global imbalances. Not many, however, argued that systemic risk was excessively high in the financial sector. One reason for this is that systemic risk is not yet well understood. Another reason is that, while housing and balance of payments data is widely available, few economists knew that financial firms had become so leveraged or comprehended the nature of the real-estate-backed assets that these firms held. Finally, most economists had little incentive to analyse systemic risk; they were rewarded for doing other things. Identifying systemic risk in the financial sector will require having the data to measure it and rewarding some body of research economists and related professionals for spotting it.

## Gathering data on systemic risk

In his testimony to the US House of Representatives, Andrew Lo describes how the first condition can be met. He proposes setting up an independent agency to collect, organise, analyse, store, and protect data on the market prices of the on- and off-balance sheet assets and liabilities of all US financial firms, including those in the shadow banking sector. Such data would allow an assessment of how leveraged and liquid the US banking system is. It would allow economists to assess the correlation of asset prices and estimate portfolios' sensitivity to changes in economic conditions.

The Eurozone should also set up such an agency, although, as Lo emphasises, collecting the raw data, maintaining it, and turning it into something usable would not be easy or inexpensive. It would require a change in the rules so that all financial entities are required to report their balance sheet positions. As many financial firms are multinational enterprises, international coordination, say through the BIS or IMF, would be desirable, but that may be politically difficult.

In addition to being costly, it should be noted that the benefits of such a systemic risk data set are limited. The data will, at most, allow policy makers to observe the *symptoms* of financial vulnerability. Using a systemic risk data set in an early warning system is no substitute for sensible economic policy and good supervision and regulation. Also, as previously mentioned, systemic risk is not yet well understood, and this creates obvious difficulties in interpreting the data.

In particular, a key feature of a crisis caused by systemic risk factors is the domino-like collapse of a chain of financial institutions after the demise of a just one or a few. This may be because of the size of the first institutions to go, or it may be because they were too interconnected to fail without damaging the entire system. Current efforts to measure interconnectedness typically employ network theory. Soramäki *et al.* (2007), for example, use a network map of the US Fedwire interbank payment system to look at “connectedness” in the US financial system. But, neither size nor conventional connectedness may be necessary for a financial crisis to propagate. Instead, a new or old-style bank run or speculative attack in one market may make a similar run or attack a focal outcome or, as recent research by Stephen Morris and [Hyun Song Shin](#) (2009) demonstrates, a tiny amount of contagious adverse selection can shut down a market.

Given the harm a financial crisis can inflict, even the limited benefits of a systemic risk data set make it worth the cost. However, once it is available, the dataset cannot be used mechanistically. One reason is that a change in a variable may be unimportant on its own but dangerous in combination with other factors. An example, due to Lo (2009), is that the greater availability of refinancing opportunities for homeowners appears benign, but in combination with higher real estate prices and higher interest rates, it can lead to householders synchronising equity withdrawals via refinancing and becoming increasingly leveraged with no way of reducing their leverage should house prices drop. The result can be a wave of defaults and foreclosures across the economy. Thus, along with an agency to collect and manage the data, the Eurozone must have a systemic risk assessment committee to interpret this and other relevant data, in light of the current macroeconomic and regulatory and supervisory environment.

## Designing a systemic risk assessment committee

This committee should be small and diverse. I suggest that ideally it should be composed of five people: a macroeconomist, a microeconomist, a financial engineer, a research accountant, and a practitioner. The reason for the small size is that, consistent with the familiar jokes, it is a stylised fact that the output of committees is not as good as one would

expect, given their members. Process losses due to coordination problems, motivational losses, and difficulty sharing information are well documented in the social psychology literature; not everyone can speak at once; information is a public good and gathering it requires effort; no one wants to make a fool of themselves in front of their co-members. As the size of a group increases so does the pool of human resources, but motivational losses, coordination problems, and the potential for embarrassment become more important. The optimal size for a group that must solve problems or make judgements is an empirical issue, but it may not be much greater than five. The reason for diversity is that spotting systemic risk requires different types of expertise. A board composed of entirely of macroeconomists might, for example, see the potential for risk pooling in securitisation, whereas a microeconomist would see the reduced incentive to monitor loans.

The committee should be composed of researchers outside of government bodies and international organisations; career concerns may stifle the incentive of a bureaucrat to express certain original ideas. It is of particular importance that the board not include supervisors and regulators. This is for two reasons. First, it is often suggested that supervisors and regulators can be captured by the industry that they are supposed to mind, and this may make them less than objective and prone to the same errors. Second, a prominent cause of the recent crisis was supervisory and regulatory failures, and these are more apt to be spotted and reported by independent observers than the perpetrators.

Finally, it is important that the board be made sufficiently visible and prominent that a member's career depends on his performance. Given the importance of the task, pay should be high to attract the best qualified, and the members should not have outside employment to distract them.

The Eurozone has already swung into action, creating the European Systemic Risk Board (ESRB), set to begin this year. Unfortunately, this board, responsible for macro-prudential oversight of the EU financial system and for issuing risk warnings and recommendations, is far from the ideal. It is to be composed of the 27 EU national central bank governors, the ECB President and Vice-President, a Commission member and the three chairs of the new European Supervisory Authorities. In addition, a representative from the national supervisory authority of each EU country and the President of the Economic and Financial Committee may attend meetings of the ESRB, but may not vote. This lumbering army of 61 central bankers and related bureaucrats is a body clearly designed for maximum inefficiency; it is too big, it is too homogeneous, it lacks independence, and its members are already sufficiently employed.

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